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## Foreword



The aim of the Norwegian Government is that supply of services in the health and social sector shall be based on the needs of the individual patient or client. Good teamwork between all the actors in the sector shall ensure that everyone experiences that the service is for them, irrespective of whether it is the health enterprises, the municipalities, the county authorities or others that offer the service or parts of the service.

Interaction presupposes that the actors are well-informed about each other and know what each of them do. Appropriate application of ICT can contribute to this in an effective way. Therefore through this government strategy, *Te@mwork 2007 (S@mspill 2007)*, we wish to expand the use of the National Health Network, and also to connect more actors to the Network. The strategy will build on the successful applications and measures that have been established as part of the previous government plans.

Population extrapolations predict that the proportion of elderly people in the population will increase in the future. This will result in more people in need of care, and the need for greater interaction between specialist health services, general practitioner and nursing and care services. The challenges for provision of municipal services are even greater as a result of the national programme for mental health, the development towards shorter length of stay in hospital, and increased responsibility for clients with complex complaints and demanding need for care.

The strategy's three-year programme for the municipalities will contribute to increased and improved teamwork between municipal health and social services, specialist health services and general practitioner services. This can occur through development and dissemination of good examples and through various information measures. The contract on quality improvement in nursing and care services between the Norwegian Association of Local and Regional Authorities (Kommunenes sentralforbund) and the Norwegian Government provides an important framework for this work.

New availability of information and services in the National Health Network will strengthen user participation in the sector. Telemedicine applications

provide new possibilities, for example, for supervision of medication in the patient's home as an alternative to in-patient care.

We believe in improved quality, increased effectiveness and cost saving through the use of information and computing technology. We also believe that the cost-benefit will first be fully realised through changes in routines, organizational development, standardization and the management of processes for change both at the national and local levels. We will follow developments closely. We are certain that we have commitment out in the sector.

Dagfinn Høybråten  
Minister of Health

Ingjerd Schou  
Minister for Social Affairs

## Summary

The health and social sector produces and is dependent on large amounts of information. Appropriate use of information and computing technology is essential for high quality and effectiveness. Successful use of ICT involves securing speedy and reliable exchange of information between cooperating partners in the sector. This involves seeing ICT development in relation to developments in organization and work processes. In order for ICT in the health and social sector to be good, contributions need to be coordinated and to pull in the same direction. Therefore a national strategy is needed.

Te@mwork 2007 is the national strategy for ICT development in the health and social sector for the period 2004-2007. The strategy shall give direction and continuity to ICT development in the sector. The vision for the work is that patients and clients shall experience continuity of care when using the services.

Te@mwork 2007 gives higher priority to certain challenges than to others. The fundamental idea behind the strategy is that things shall be done properly rather than halfway. Therefore the national strategy will have two main priority areas.

The first main priority area involves improving the flow of information in the sector. This presupposes working with infrastructure, information structure,

information security, electronic patient records, exchange of electronic messages and access to professional support. These areas have been chosen for two reasons. First, a characteristic of these areas is that electronic interaction between different actors and applications is essential. Second, it is important to secure vitality for the common applications that are being established within these areas.

The second main priority area involves greater inclusion of new actors in electronic interaction in the sector. So far electronic interaction has mainly been developed between health enterprises, general practitioners and the National Insurance Service. Patients, clients and relatives, pharmacies and municipal health and social services are actors that must be included more closely in the interaction. These actors have been given priority on the basis of ICT maturity and the need for electronic interaction with areas that have already been developed.

The strategy shall be implemented with the aid of annual plans that specify measures within the two priority areas. Strategies have already been developed for some areas and for some parts of the sector. This applies particularly to the overall ICT strategy for the health enterprises and the strategy for the further development of the National Health Network.

# 1. Electronic teamwork for continuity of patient care



## 1.1 The need for a strategy

We wish for a society in which good health and social security are ensured for the whole population. The health and social sector continually face new challenges in ensuring that these values are met.

Examples of such challenges are ensuring a comprehensive supply of services in a period with increasing specialization, and maintenance of adequate welfare services when state and municipal budgets are tight.

How can the challenges be met? A comprehensive focus on the priority areas of information and computing technology (ICT) is regarded by many as the most effective measure for improving quality and effectiveness in the health and social sector. The following quote illustrates the strong political emphasis given to this area internationally, in this instance from a meeting of ministers of health in the EU countries:

*"eHealth is the single most important revolution in health care since the advent of modern medicines, vaccines, or even public health measures like sanitation and clean water".*

Appropriate use of ICT is decisive if we are to succeed in the further development of the health and social sector. Today, ICT is a central tool for preventive care and

become a natural channel for dialogue with an increasing proportion of the population. Electronic interaction between the various sections involved in service provision and preventive activity is also extensive and increasing.

At the same time, the full potential for ICT investments within the sector is far from being fully realised. Paper-based and ICT-based systems often exist side by side. This means duplicate work and ambiguity in dealing with information. Different technological applications and lack of standards hinder interaction, both within and between different organizations. The changes to the organization and work processes that are required in order to realise the full potential that ICT applications provide have only been made to a limited degree.

The following things must take place, before the great benefits associated with appropriate use of ICT in the health and social sector can be attained:

- paper must be removed when electronic applications are implemented
- electronic interaction must be extended to all the cooperating partners in the sector and to other cooperating areas
- ICT interaction must ensure continuity and coherence, by placing emphasis on common standards, improved flow of

## Electronic interaction must be extended to all the cooperating partners in the sector

provision of services in this sector. A health enterprise, a doctor's surgery, a dental clinic and a nursing home are all dependent on ICT in order to function. The internet has

information between different applications and national implementation of important applications

- ICT development must follow

1 This quote is from a report (1) from the EU Ministerial Conference "The Contribution of ICT to Health". In May 2003 more than 600 politicians, government officials and officials from 34 countries attended the conference.

2 Health service in this context includes primary health services, specialist health services and dental services.

3 There is no satisfactory Norwegian definition of continuity of care for patients (pasientforløp). A draft list of definitions of concepts has been developed in the European pre-standard "System of Concepts to Support Continuity of Care" (2).

organizational development, changes in work processes, and new forms of interaction and division of labour

Further development demands coordinated efforts. A national strategy is needed in order to achieve this. Te@mwork 2007 is a strategy that provides coherence and direction for national priority areas for electronic interaction in the health and social sector from now until 2007.

### 1.2 Vision: continuity of care for patients and clients

Patients' meeting with health services<sup>2</sup> can be described as a continuity comprising different events, from the first meeting until all necessary treatment has

services and social services, for example in the case of a person with both an alcohol or drug problem and a psychiatric disorder.

The concept "continuity of patient care" places emphasis on coordination and continuity in provision of services and preventive care. The aim is that patients and clients shall experience continuity of care when they use the services. Electronic interaction is decisive in order to ensure the improved flow of information that is necessary to achieve this goal. The vision for Te@mwork 2007 is therefore:

*Continuity of care for patients and clients through electronic interaction*

services. In addition, the vision of "Say @h!" was to achieve ICT-based interaction in the services on a broad basis, not just in pilot projects.

Together with successful work locally, the priority areas have produced results. The external evaluation of the plan "Say @h!" concluded that "Say @h!" has made a positive contribution to accelerating and coordinating developments in ICT in the health and social sector during the period covered by the plan (5). There is more continuity in the ICT priority areas in the sector today than previously. ICT is used more and more extensively in different areas in order to facilitate interaction between service providers. However, there is still a long way to go before the

## Sustainable implementation.

## Focussed and step-by-step advancement. Accountability

been provided<sup>3</sup>. This strategy involves a broader understanding of continuity of patient care, that also includes self-care before contact is made with the health service and necessary nursing and care services during and after treatment. Therefore preventive health care and municipal services are also included in the continuity of patient care. For many patients, the continuity of care will involve contact with several sections of the services, on different administrative levels, with different institutions and with different professions.

Similarly, users of social services will experience their meeting with various service providers as a continuity of care. For some people, this continuity will encompass a combination of health

### 1.3 Experience

We have had national priority areas in Norway aimed at development of ICT in the health and social sector since 1997, based on the plans "More health for each bIT" (3) and "Say @h!" (4). The priority areas were chosen on the understanding that comprehensive national measures were necessary in order to realise the potential of ICT. The background for this is a situation in which enthusiasts throughout the country have initiated various exciting ICT projects. However, these projects have been poorly coordinated. The ability to implement them into the everyday running of the services on a broad basis has also been poor. The vision of "More health for each bIT" was to build bridges between the many ICT islands in Norwegian health

full potential is realised, and acceptance of common applications can easily be weakened if nothing is gained.

During the "Say @h!"- plan period one report on the benefit (6) and one final evaluation report (5) were published. Both reports point out that the empirical foundation was too weak to give a good documentation of the results. Measurement and documentation of the status, measures and benefit will be given more focus in the future.

Important experience gained from the two previous national ICT plans are as follows:

- *Sustainable implementation*: National priority areas, just as local ICT priority

areas, must be followed up until they have gained adequate acceptance, and have demonstrated that they are sustainable in daily operations.

- *Focussed and step-by-step advancement:* New priority areas should not be too broad, but measures should be implemented thoroughly in a few selected areas. Ideally these areas should be closely linked to areas that have been given priority previously, in order to take advantage of the experience gained by interactive partners.
- *Accountability:* The actors who shall benefit from areas that are given priority must be made accountable, both financially and as owner of the project. This helps to ensure that priority is given to areas the greatest needs.

#### 1.4 Main priority areas

The vision of continuity of patient care and experience from previous national ICT plans form the basis for the choice of priority areas for attaining the goals of the strategy. Electronic interaction will be strengthened and developed through two main priority areas in the period 2004-2007:

##### *First main priority area: free flow of information*

Existing electronic interaction must be consolidated in order to ensure that the benefits are realized and the applications

support. These areas have been chosen as specific areas of action for two reasons. First, a characteristic of these areas is that electronic interaction between different actors and applications is essential. Second, it is important to secure vitality for common applications that are being established within these areas.

##### *Second main priority area: electronic interaction with new actors*

So far electronic interaction has mainly been developed between health enterprises, general practitioners and the National Insurance Service. Electronic interaction that supports continuity of care for patients and clients must be expanded to include other actors. This expansion shall take place through having a clear focus and by advancing step-by-step, so that new areas are given priority according to ICT maturity and the need for electronic interaction. Chapter 4 deals with areas of action for attaching patients and clients, pharmacies and municipal health and social services more closely together in the continuity of patient care.

The main priority areas in Te@work 2007 must be seen in relation to other ICT priority areas in the health and social sector. A separate ICT strategy will be developed for coordinating the Norwegian Public Employment Service (Aetat), the National Insurance Service and the social

Limitations and possibilities do not lie primarily in the actual technology, but in how it is applied.

are sustainable. Chapter 3 deals with the following areas of action: infrastructure, information structure, information security, electronic patient records, exchange of electronic messages and professional

services. The regional health enterprises have developed a common ICT strategy. A description of these processes is given in Chapter 2.



### 1.5 Challenges: technology, organization, legislative requirements

Attaining electronic interaction is not only a question of technology. Limitations and possibilities do not lie primarily in the actual technology, but in how it is applied. Choice of technological application, organization of activities and work processes, skills, legislation, culture

#### Organization

The benefits gained from electronic interaction in the health and social sector are only to a limited degree associated with the actual technology and the automation that results from ICT. The benefits, both in relation to quality and effectiveness, are first achieved when electronic applications are combined with changes in work processes and

In the work that will now be done, it will be necessary to carry out a detailed analysis of service providers' need for access to information. While some people are positive to sharing information, others claim that it is more effective to exchange information, and that secure re-use of information presupposes that exactly the same issues are involved (7).

## The benefits are also dependent on the culture in an organization being amenable to change.

and economy are all important aspects in terms of attaining electronic interaction.

#### Choice of technology

To achieve electronic interaction in the different areas in this plan could often be through technological applications that are basically different, for example:

- When introducing electronic patient records in a health enterprise, the many different systems that make up the patient record have to be integrated. Several different strategies for integration may be appropriate, from a strategy in which the relevant systems are connected with a common user interface to a strategy involving a more basic integration between systems.
- In the "Say @h!" plan, electronic interaction between actors has largely taken place through exchange of electronic messages. Depending on the aim of cooperation, it may be appropriate to combine several different methods for sharing information. Examples of such methods are common databases, e-mail, exchange of electronic messages and telemedicine cooperation.

appropriate division of labour between organizations. The benefits are also dependent on the culture in an organization being amenable to change. The measures given priority in Te@mwork 2007 must be combined with organizational development, and appropriate division of labour and distribution of functions at all levels in the sector. ICT applications primarily provide possibilities, for example to move service production and skills to a lower level, nearer the client's home. However, full utilization of these possibilities demands more than just investing in technological applications.

#### Legislative requirements

The main objective of continuity of care for patients and clients presupposes that the service providers who cooperate have access to updated information about, among other things, evaluations, tests, use of medication and treatment that has been initiated. However, the need for available information must be combined with the need to take account of protection of personal privacy and the duty of confidentiality.

Further work will to review the current legislation, in order to propose alternative solutions, both alternatives that are possible to implement within the framework of the current legislation and alternatives that require changes to the legislation. In this context, it is essential to find balanced and secure applications that both take account of the need for access to information when treating patients, and the individual patient's protection of personal privacy.

## 2 Implementation, foundation and measures



### 2.1 Concretisation and implementation of the strategy

In achieving the goals of Te@mwork 2007, national interaction for development shall be strengthened. The strategy shall include an annual plan for implementation, in which the areas of action shall be specified in terms of clearly defined measures, described in relation to, among other things, the aims for the activities, the time plan for implementation, the responsible actors, funding/budgeting, organizational effects and cost/benefit evaluation. Central actors in the sector shall participate in developing the plan for implementation, in a binding cooperation nationally, regionally and locally.

Administration. The Directorate for Health and Social Affairs has an important role in terms of ICT strategy in the area, and responsibility for following up the plan. The National Insurance Administration has a key role related to flow of information in the sector. The Norwegian Medicines Agency will have a central role related to electronic prescriptions and appropriate use of medicinal products. The supervisory roles of the Directorate for Health and Social Affairs, the Norwegian Board of Health and the Norwegian Data Inspectorate will be important in ensuring that developments in the area are in line with sound practice. National centres of expertise will contribute to achieving the aims of Te@mwork 2007 through several of the national measure that have been outlined. KITH, NST, KOKOM and the EPJ-centre<sup>4</sup> will have central roles in assisting development, each within their own area of competence. Several of the actors also have important research roles, in particular NST, the EPJ-centre and the Research Council of Norway<sup>5</sup>.

The regional health enterprises and the health enterprises, by virtue of their size, competence and ICT maturity, represent a driving force for dispersing electronic interaction in the health and social sector.

Te@mwork 2007 involves an intensified focus on priority areas for electronic interaction between specialist health services and municipal health and social services. The municipalities will play an important role in achieving continuity of care for patients and clients.

Development of appropriate, well-functioning applications for electronic interaction is also dependent on close cooperation with ICT suppliers.

Implementation of a new plan will always be dependent on joint effort and cooperation

The concrete development of electronic interaction in the sector will mainly take place under the auspices of the individual actors (municipality, general practitioner, health enterprise, national insurance office, pharmacy and others). Te@mwork 2007 will encompass only a small part of all ICT investment in the sector. The level of ambition nationally will depend on the annual budgeting processes. Implementation of a new plan will always be dependent on joint effort and cooperation with the initiatives in the service – including financing.

At the national level, the Ministry of Health and the Ministry of Social Affairs will have overall responsibility for Te@mwork 2007. Underlying bodies that in particular will have an important role in implementation are the Directorate for Health and Social Affairs and the National Insurance

4 KITH: Kompetansesenter for IT i helsevesenet, Norwegian Centre for Informatics in Health and Social Care  
NST: Nasjonalt senter for telemedisin, Norwegian Centre for Telemedicine

KOKOM: Nasjonalt kompetansesenter for helsetjenestens kommunikasjonsberedskap, National Centre on Emergency Health-Care Communication  
EPJ-senter: Norsk senter for elektronisk pasientjournal ved NTNU. Norwegian Centre for Electronic Patient Journal. Norwegian University of Science and Technology

5 According to the research programme "ICT in medicine and health services", in which the Research Council of Norway has to a large degree given priority to research areas based on national ICT strategies.



## 2.2 Foundation in health and social policy: high quality services

If the cost of ICT investments is to be justified, the investments must make a significant contribution to meeting health and social policy goals. A clearly stated main objective is to supply services of high quality. This goal is defined more fully in the national strategy for improving the quality of health and social services (8). According to the strategy, high quality services are services in which patients and clients are involved, that are coordinated and characterized by continuity, that utilize resources efficiently, and that are effective, secure and distributed fairly. The vision is services based on the best available information.

The different aspects of quality of services are dependent on each other. For example, effective and safe treatment is dependent on good interaction between the services, so that essential and updated information is available to each individual service provider. Te@work 2007 is based on the understanding that appropriate ICT investments will support all the aspects of service quality that are mentioned, but that ICT most directly lays the foundation for the following aspects of quality: user involvement, coordination and utilization of resources.

### Involve users and allow them to have influence

During the last few years, health and social policy has aimed to strengthen patients' and clients' influence and participation in their own treatment and follow-up (9, 10, 11, 12). Such participation presupposes that users are well informed, that services are available, and that

services are organized in such a way as to allow self-treatment and self-care if this is desired. This makes it possible to involve users of the service, for example in preventive activity, in choice of place where treatment is provided and in choice of method of treatment and examination. New web site information and services will strengthen user participation in the sector and will contribute to breaking down barriers for handicapped people (13). An example of this is the possibilities provided by telemedicine for monitoring people in their own homes and for administering medication. At the same time universal accessibility has to be ensured for the new information and service channels.

Users who do not wish to use the new methods must also be catered for. New electronic channels for information and services shall supplement, not replace, traditional forms of service supply and exchange of information.

### Coordinated services characterized by continuity

Improved interaction between specialist health services and municipal health services is the theme for a publicly appointed committee for interaction (14). In the committee's mandate it is stated that:

*"Large groups of patients are dependent on municipal health services and specialist health services functioning as a continuous treatment chain that provides continuity of patient care. In many cases coordination is not good enough. This can lead to deficiencies in service provision, unnecessary hospital admissions, premature hospital discharges, and inadequate follow-up from home nursing*

*services, nursing homes and primary physician services. In particular, elderly people and handicapped people with complex complaints, and chronically ill people, handicapped people, alcohol and drug abusers and people with psychiatric illness will benefit from improved coordination"*

An increasing proportion of elderly people in the population, increased specialization, distribution of functions and free choice of hospitals, increase the need for cooperation between specialist health services and municipal health services. Because of the developments, it is important and necessary to exploit the potential provided by ICT in order to ensure improved flow of information and good interaction in the health and social sector. The large volume of information about treatment, care and administration that is exchanged in the sector today would be unmanageable without the use of ICT systems. The "dam" for improved flow of information today is to be found where ICT systems and paper-based systems meet, or where incompatible ICT applications are used.

### Efficient utilization of resources

In order to achieve high quality, resources must be utilized in such a way that users and society as a whole receive the best possible benefits. Both the health sector and the social sector are under great economic pressure, while at the same time expectations about short waiting lists and high quality for the services are high.

In order for increased effectiveness to be achieved without reducing quality, new technology must be taken into use, while at the same time organizational and work

processes must be changed. Intensified focus on appropriate ICT priority areas will eventually lead both to better utilization of resources and to improved quality. Changes in distribution of functions and division of labour within and between levels in order to achieve increase effectiveness create

Te@mwork 2007 shall also be regarded as part of the Norwegian Government's strategy for modernization of public administration, including the *Strategy for ICT in the Public Sector* (16). The main elements of this strategy are to be found in Te@mwork 2007, through measures for coordinating use of concepts, standardization, digital signatures and professional support.

## Te@mwork 2007 will represent a substantial contribution to the attainment of goals of the Government's ICT policy

new needs for coordination of services. These needs can be met through electronic interaction.

### 2.3 The foundation of the ICT-strategy

The priority areas for Te@mwork 2007 represent a substantial contribution to the attainment of goals of the Norwegian Government's ICT policy for the period 2004-2007. The development of the National Health Network and the expansion of electronic interaction between health enterprises, general practitioner s, nursing and care services and the National Insurance Service are central elements of the initiatives in *eNorway 2005* (15) for improving organization and for achieving more effective performance of tasks in the public sector. At the same time, Te@mwork 2007 introduces measures that will have their foundation in the general ICT policy, through work that is to be done as part of eNorway. Examples of such measures are more widespread use of digital signatures in cooperation with the health sector and the National Insurance Service, and linking of the municipal networks and the National Health Network.

Te@mwork 2007 follows up European initiatives in the field of ICT, as proposed through the EU initiative for *eEurope 2005* (17). Examples of priority areas in the eEurope plan are development of infrastructure, information security and interactive services to the public. These are also priority areas in Te@mwork 2007.

### 2.4 Relationship with the regional health enterprises' ICT strategy

The regional health enterprises have defined ICT as one of the areas for common strategy development, through the *National ICT group*. The group has developed an overall ICT strategy for the regional health enterprises. Along with other common initiatives, they have defined the priority areas in Te@mwork 2007 in which the regional health enterprises are involved. In other words, parts of the National ICT group's strategy define the role and the responsibilities of the regional health enterprises in achieving the goals of Te@mwork 2007.

### 2.5 A separate ICT strategy for coordinating the government employment service (Aetat), the National Insurance Service and the social services

Coordinating the government employment service (Aetat), the National Insurance Service and the social services is a central

6 A project run by the users under the auspices of the Norwegian Medical Association, in which the users (practising physicians) decide jointly on the requirements for fulfilling the needs of a physician's surgery for electronic cooperation. The work is carried out under contract in cooperation with the suppliers.

7 IHE (Integrating the Healthcare Enterprise) is a method for getting suppliers and users of ICT applications to work together on integration of ICT systems. So far, this work has focussed on radiology.

element of the Government's work to modernise public administration. A committee has been established to investigate different models for a coordinated administration (18). A project with participants from all the involved parties is developing a strategy to produce ICT applications for a coordinated administration of these services. The way in which the strategy is being developed is in line with the priority areas in Te@mwork 2007, and does not change the main content of these. However, to communicate with a coordinated welfare administration, in which all or parts of social services are included, represents a new challenge for the health and social sector. The strategy for developing ICT applications that can be implemented by the time a coordinated welfare administration is established, has two phases. The first phase involves investigations and measures that are appropriate to work with before decisions about the future organization of the services are finalized. The second phase will begin when the final decision has been made about the future organizational model. In both these phases the work will be evaluated in relation to adaptation and the need for reassessment on the background of the priority areas in Te@mwork 2007.

## 2.6 Measures

Some of the national measures for achieving the goals of Te@mwork 2007 are as follows:

### Development of national common goods and guidelines

There is a need for separate projects at the national level, in order to ensure that common goods, that the individual actors cannot be expected to develop

themselves, are developed. Examples of such common goods are infrastructure, a system of concepts, standards, specification of requirements and services.

### Identify barriers to development

Barriers to development of electronic interaction may often be common for the whole sector, and may, for example, be of economic, legislative or organizational

character. It is a task for the national level to identify such barriers and to initiate measures to remove them.

### Make possibilities, potential solutions and practical solutions visible

The possibilities provided by ICT applications must be identified and made visible. This can be achieved through good demonstration projects and by establishing new arenas for interaction. There is also a need for close contact between researchers and health service providers.

### Contribute to cooperation between health service providers and suppliers

In order for appropriate applications to be developed successfully, it is necessary that they are developed on the basis of the needs of the health service providers and the users, and that they are not steered only by technological developments. Service providers and health personnel must take an active role in the development of new applications. There is a need for extensive cooperation

between the authorities, the service providers and the suppliers in the development of new ICT applications for the sector, in order to ensure that the needs of the users are catered for and that the applications are compatible nationally. Models for binding cooperation on the lines of the ELIN project of the Norwegian Medical Association<sup>6</sup> and the work of the IHE<sup>7</sup> can be considered.

The possibilities provided by ICT applications  
must be identified and made visible.

### Evaluation: measure the development and document the benefits

Importance will be given to documenting the benefits and evaluating the implementation of projects and measures that are part of the plan. In order to strengthen the empirical base, long-term systematic observations are needed. Appropriate indicators must be defined, and stable and predictable arrangements for regular reporting must be established.

### 3 Main priority area 1: improved flow of information



Cooperation within the health and social sector today is hampered by a flow of information that is far from satisfactory. Information is often not available where it is needed, when it is needed and in the right form. Information is exchanged in ways that are time-consuming and/or insecure. Information goes along channels that are not continuous, some of them paper-based, others electronic, often using different electronic applications. This means that information may accumulate along the way, for example if it needs to be printed out on paper and put in an envelope. In addition, the quality of information is often not good enough. It can be imprecise, incomplete and irrelevant and can lie around in different organizations or within an organization.

Efforts need to be made to improve the flow of information in the health and social sector. Well-defined and appropriate information must be the basis. It must be possible to send information along secure and speedy channels that have sufficient capacity. Generally, information must be handled in a sound way at all stages. Within large organizations such as hospitals, collecting information from patient records in one place, in a format that makes it easy to find, update and send further, presents a challenge. Electronic patient records (EPR) must be developed to solve these problems. The flow of information that takes place today through exchange of electronic messages must be expanded and improved in order to ensure that applications are used widely. Service provision must be supported with updated and evidence-based professional support with adequate accessibility.

Six areas shall be given priority in Te@mwork 2007 in order to ensure

improved flow of information in the sector:

1. comprehensive and well-defined information base
2. the National Health Network
3. information security
4. electronic patient records
5. consolidate more extensive use of electronic message exchange
6. professional support and evidence-based sources of information.

#### 3.1 Comprehensive and well-defined information base

Much work has been done with standardization and definition of concepts in the health and social sector. Lists of definitions, standards, codes, classifications and terminology have been developed, some of them translated from other languages and adapted to Norwegian conditions. The continuing activity in this field is extensive and is run by the Norwegian Centre for Informatics in Health and Social Care (KITH), in line with international developments in the field. This work is important, not only as a basis for electronic interaction, but, among other things, as a basis for calculations for financial arrangements and for producing comparable research data.

As the basis for electronic interaction, this area has four weaknesses:

- *Lack of comprehensiveness:* The work is characterized by a "bottom-up" approach, where different needs for standardization become apparent and are dealt with as they crop up. Although the methodology and approaches to work on standardization are consistent and of high quality at the operative level, the national authorities lack a sound basis for making strategic choices in the area.

# The National Health Network shall support exchange of information

- *Inadequate implementation:* Many standards that are developed are not fully utilized in practice. This may be partly because the standards are unfamiliar or poorly understood, and partly because use of the standards is voluntary.
- *Poorly developed standard concepts:* Different definitions of central concepts lead to mistakes and misunderstanding when producing statistics and for electronic interaction. In order to remedy this, lists of definitions have been developed ad hoc, without plans for carrying out the necessary maintenance of the lists, and without plans for updating the definitions in other lists.
- *Lack of coordination between verbal definitions of concepts and technical representation of the same concepts:* Lists of definitions contain precise definitions of concepts that are suitable for verbal communication. However, these definitions cannot be used directly in economic cooperation. The concepts must be given a formal technical representation that the suppliers can relate to when developing their systems. Standards of electronic messages and standards for content of patient records contain such formal technical representations of concepts, but these are coordinated only to a very limited degree with the verbal definitions.

## Strategy

A comprehensive, well-defined information base, based on two components, must be established:

1. *Information structure:* an agreed, overall understanding of the information structure in the sector – in other words, agreement about the central

information elements that are used and exchanged between the actors. The information structure must be developed “top-down” in order to ensure the necessary comprehensiveness. At the same time, the work must be coordinated with the on-going national and international work on definitions. In order to limit the task, it is appropriate to base the structure on the continuity of patient care.

Central tasks are:

- to obtain an overview of the relevant actors and the information elements
- to define an appropriate flow of information, based on the current organization and an evaluation of future possibilities
- to control the quality of and coordinate the definitions for the information elements
- to ensure that the information structure takes account of future possibilities in relation to current flow of information and established routines for regular revision of the structure.

2. *A common system of concepts:* A common system of concepts shall be developed for the health and social sector, with easy access and good routines for up-dating. A new national editorial board shall be established to coordinate and maintain the common system of concepts for the health and social sector at Volven ([www.volven.no](http://www.volven.no)). The board shall decide on the need for changes, coordinate existing concepts and authorize new definitions.

The strategy shall give direction and impact to the work on standardization. The information structure shall provide

the national authorities with the basis for giving priority to the national work on standardization and definitions and for choosing the strategy for implementation, in addition to forming the basis for the choice of new areas for electronic interaction.

## 3.2 The National Health Network

The National Health Network was one of the main priority areas in the plan of action “Say @h!”. The five regional health networks are now connected in a coordinated network. Through the establishment of the National Health Network, an electronic motorway is now in place, with the security, capacity and availability that is required in order to exchange information in the health and social sector. This is the first step on the way to cooperation between administrative levels and across regional borders.

The vision is that the National Health Network shall contribute to high-quality and coherent health and social services, by being a sector network for effective cooperation between the different service sections in the sector.

The National Health Network shall support exchange of information and give affiliated organizations the possibility to offer professional support, medical services and administrative services in the network. This will give new possibilities for division of functions, specialization, cooperation when making duty lists and professional cooperation.

A basic principle of the National Health Network is that one connection point and one joint communication platform shall give access to a broad range of services for electronic exchange of information.

Such services will, among other things, be secure e-mail and exchange of electronic messages, telemedicine services, use of common systems on the network and controlled access to the internet. From one and the same connection point, users shall be able to communicate with all the other actors that are connected to the network.

### Strategy

1. *Further development of the National Health Network:* A special strategy and action plan has been developed for the National Health Network (19). The network shall be operated and further developed in line with this strategy. This involves connecting more actors and offering additional services. A particularly important measure is to connect the suppliers of municipal services to the network. Connection can take place either by direct connection, via the municipal network, the pharmacy network or other networks that become connected to the National Health Network. The National Health Network shall adapt the service for such connections. Different types of services must be developed for the network in order to increase the usefulness of the network for the actors. The National Health Network shall not develop or deliver such services, but shall prepare the way for exchange in the network. The National Health Network can also encourage the development of high-quality services for users of the network.

2. *Joint operating organization:* Responsibility for operating and developing the National Health Network shall be centralized in a joint operating organization. This organization shall be given national responsibility for supplying secure basic communication between the actors in the health and social sector. This involves responsibility

for the communications network and for basic communication services such as address systems, catalogues and support systems for exchange of information, for example address lists (register of health service units / HER) and electronic ID (certificate catalogue).

### 3.3 Information security

Much of the information associated with the continuity of patient care is sensitive. This information must be protected against access by unauthorized persons (safeguarding the confidentiality and integrity of information). At the same time, complete, updated, correct and relevant information shall be available for those who have a legitimate need for information (safeguarding the quality and availability of information). On the one hand, ICT applications are vulnerable in relation to information security. Breach of confidentiality can potentially have huge consequences – for example if a patient record is distributed on the internet. On the other hand, ICT applications introduce new and improved possibilities for information security. Technical barriers can be used to check in advance that only authorized persons gain access to information, and tracking mechanisms can be used later to check access. In addition, ICT applications improve access to updated information about the individual patient, which in turn can improve the treatment provided to patients.

Included in the Government's overall goals for information security (20) is that ICT infra-structure shall be robust and secure and that we must develop a positive culture for ICT security in Norway. Everyone has an independent responsibility for acquiring the necessary information that they need in order not to be in breach of Norwegian legislation or ignore general ethical and democratic principles.

8 Medical technology such as stethoscopes and thermometers will be electronic, also referrals, discharge summaries and other information from cooperating units.

9 An electronic patient record is a patient record in which information is stored electronically in such a way that it can be retrieved and used with the aid of suitable software. An electronic patient record can also contain references to paper documents, pictures and other information that is stored outside the record. (21)



# EPR throughout the whole of the health services is a premise for continuity of patient care

Many establishments will need support in their work with information security. They may have the following questions:

- Is it safe to be connected to the National Health Network?
- Can I trust the information I receive?
- What must I do myself in order to manage patient information in a way that is acceptable?

Predictability and security must be attained that information security must be taken care of by the actors who cooperate in the sector. Predictability involves both knowing who one sends information to and receives information from, and which measures can be taken to safeguard the information that the person concerned can be expected to have.

It is important to make a general assessment of how electronic interaction can ensure improved flow of information, while at the same time ensuring that information security and protection of personal privacy are taken account of. Evaluation of the legislative framework in the field must be included in the strategy, in order to achieve continuity of care for patients and clients.

## Strategy

### 1. Trade standard for information security:

In 2003, work on developing a trade standard for information security was begun in the health sector. Under Te@mwork 2007, the standard shall be determined and implemented in the sector. The trade standard shall define a set of minimum requirements for information security in the sector. The standard shall provide the health sector with a common understanding and a common level for information measures, and the need for agreements

and control in connection with electronic interaction will be substantially reduced. If work with a trade standard is to be successful, information security and the trade standard must have a foundation both with the leaders and with those who work at the practical level with personal information

### 2. Strategy and roll-out programme for PKI

(Public Key Infrastructure): The National Insurance Administration, on behalf of the Ministry of Health, has entered into a general agreement on certificates and services for digital signatures (PKI services) in the health services. The agreement can be used by all the actors who shall have electronic interaction in the health sector. In order to contribute to increased implementation of PKI in the health sector, a strategy and a roll-out programme shall be developed. The strategy shall also consider the use of PKI in relation to the municipal sector and patients. Cooperation with the coordination body for PKI of the Ministry of Labour and Government Administration is necessary for coordination with other sectors.

## 3.4 Electronic patient record

The patient record is the core in the flow of information in the health service. It is here that all information is gathered from those who have an obligation to provide documentation. When production and dispatch of information from patient records becomes digitalized<sup>8</sup>, this core will need to be well integrated. The immediate gains of introducing electronic patient records (EPR)<sup>9</sup> are clear and perhaps particularly visible in general practitioner services so far. Routine work, such as writing prescriptions and issuing medical certificates, is done more quickly,

the record is more easily readable and complete, and last but not least, physicians find the patient record when they need it.

However, the potential gains of introducing EPR involves much more than pure automation. EPR can be used as a source of data for leadership, planning and research. Large amounts of resources are currently used to collect data manually for planning in specialist health services and in nursing and care services. By using EPR, collection of data can largely be automated and expanded. In addition, organization of data and information obtained from reports, diagnosis, treatment and evaluation of patients can be used to measure the quality and cost of the services that are provided.

A thorough and general introduction of EPR is presumed to have the most potential gain of all the ICT measures in the health and social sector. EPR throughout the *whole* of the health services is a premise for continuity of patient care in general and in particular for patients with chronic complaints or complex needs.

EPR systems are generally used in general practitioner services today, but much is still to be done in other sections of primary health services. In general the health enterprises have not come as far as general practitioner services in introducing EPR. This is mainly because of the special challenges associated with introducing an integrated EPR system in complex organizations. Integration between clinical systems, laboratory systems and administrative systems today is often poor. The transition from paper patient records to electronic applications is often not complete. The

# The achievement of possible efficiency gains through the development of EPR demands a multi-professional approach

result is that most health enterprises have some kind of “belt and braces” application, in which paper patient records still exist, with electronic applications for only some of the information elements that are part of the complete patient record.

EPR meets many challenges, but can also present new challenges. An overview can be lost in all the screen images. It is demanding to keep an overview over time for patients with several problems that need treatment, especially when several different agencies are involved at the same time with work for one patient. This requires that applications are developed that make it possible to organize information on the basis of the patient's problems or period of care.

## Strategy

The achievement of possible efficiency gains through the development of EPR demands a multi-professional approach, and research that is carried out in line with, and in support of, organizational development. This work must be closely integrated with clinical practice and with users, both in specialist health services and primary health services. The main objective for further coordinated development will be that:

- EPR shall represent the whole continuity of patient care
- EPR shall support interaction through exchange of electronic messages and sharing of information
- It shall be possible to retrieve and adapt EPR information for planning, leadership, research and quality improvement
- It shall be possible for EPR to aid decision-making for health personnel through quality control of procedures, integration of clinical guidelines and access to current legislation.

The strategy shall include the following elements:

1. *The introduction of EPR* in health enterprises must be carried through. At the same time, bodies that are appropriate cooperating partners in municipal health and social services must introduce and begin to use patient record systems and documentation systems that support electronic interaction<sup>10</sup>.
2. *EPR strategy*: An EPR strategy shall be developed, that defines the direction and time plan for introducing the remaining sections of EPR nationally. The strategy must be built on a solid information base, including competence in the areas of health, technology and organization.
3. *Research*: Through research and dissemination of information, the recently established centre for electronic patient records shall build up competence nationally about EPR, to meet the challenges that emerge from patients' needs, from the health sector and from trade and industry.

## 3.5 Consolidate the dissemination of electronic messages exchange

Improved flow of information between the different stages of treatment can help to reduce unnecessary waiting time and delays in the continuity of patient care. Today, sending referrals and requisitions, discharge summaries and results in the post is very time-consuming.

Much work has been done on developing standardized exchange of electronic messages between health enterprises, general practitioners, the National Insurance Administration and national registers. Some of these electronic messages are gaining nationwide usage, while others are still at the research and development stage. Extensive use of the

<sup>10</sup> Applications must be based on current standards and specifications of requirements, such as the specification of requirements for electronic documentation for nursing (22) and the electronic documentation system for nursing and care services (23).

most important electronic messages will be decisive for acceptance of electronic interaction in the sector in general, including the actors' consideration of the usefulness of the National Health Network.

Exchange of messages is particularly relevant in areas that routinely exchange structured information such as referrals, discharge summaries, orders for and results of examinations and laboratory tests, and prescriptions for medicinal products. The standards of message exchange that have been established shall be implemented.

Electronic referrals must be combined with possibilities for *electronic booking* of appointments with a specialist by the referring physician while the patient is present with his or her regular medical practitioner. The aim is to reduce uncertainty about future events when a patient is referred by his or her physician for an examination with or treatment from a specialist, and to avoid delay due to appointments having to be changed because they are not convenient for the patient. For the health enterprise, electronic booking of appointments will lead to more efficient use of resources, because fewer appointments will need to be cancelled. At the same time this demands improved planning of resources, when appointment books are made available. Referring physicians will have a new task, but can offer a better service to the patient. It will also be easier for patients to exercise their free choice of hospital.

### Strategy

1. *Standards of electronic messages* : Work with standards of electronic messages shall continue and be developed further. There will be an increased focus

on coordinated implementation of standards of electronic messages and more widespread distribution of messages, including the development of *testing and approval arrangements* for suppliers in relation to the standards. This work must be carried out in cooperation with the regional health enterprises' roll-out programme for electronic messages and the Norwegian Medical Association's ELIN project.

2. *Electronic booking of appointments*: A national application for electronic booking of appointments for specialist health services shall be developed, that can be combined with electronic referrals and requisitions. The application shall be disseminated to health enterprises and referring physicians.

### 3.6 Professional support and evidence-based sources of information

High quality in the health and social sector requires that decisions about treatment, preventive health care, nursing and care, and social services are based on reliable information about the effect of the measure. A prerequisite for this is that service providers are professionally updated. This is demanding, since the different professional areas are characterized by continual change, with new information becoming available all the time. If personnel are to be professionally updated, relevant and reliable information must be easily accessible when it is needed.

Electronic professional networks can strengthen cooperation between different service providers. If these types of network are to function well, the cooperating partners must have access to a common information base. Examples of

relevant references that should be generally and easily accessible in daily practice are medical books, pharmaceutical indexes, national professional guidelines, procedure manuals and clinical registers.

The information base in the health and social sector can be substantially improved by establishing quality-controlled national web sites as sources of information. Two factors in particular contribute to this:

- Information can be updated continually, without the individual service provider having to update it himself or herself.
- The applications can be integrated with central professional support systems such as patient record systems and administrative procedures, in such a way that selected relevant information is made available as it is needed.

### Strategy

*Access to scientifically based information in the health and social fields*: The quality of health and social services shall be improved by giving providers easy access to scientifically based information in the health and social fields. A national web site shall be established, providing access to systematic updated information, practical advice and clinical guidelines. Among other things, the information service shall provide access to:

- relevant databases and journals
- an arena for learning how to search for and evaluate scientific articles
- practical electronic information support, providing information, for example, about medicinal products, diagnosis, treatment and procedures
- topic modules for specific areas, for example mental health.

## 4 Main priority area 2: electronic interaction with new actors



Electronic interaction in the health and social sector is increasing. At the same time, good electronic applications are lacking in large areas of the continuity of patient care. Web sites for the public about health and health services are incomplete and quality control is lacking. Central actors in the continuity of patient care such as pharmacies and municipal services interact electronically only to a limited degree with their cooperative partners. In order to achieve continuity of care for patients and clients, electronic interaction in the sector must be expanded, such that more actors participate in electronic flow of information.

and end in the patient's own home. However, access to relevant information and appropriate electronic services are unsatisfactory for these phases of patient care. Information on the internet on patients' rights, supply of services and health and social issues is poorly organized and of variable quality. The possibilities to contact home nursing services or regular general practitioners, for example to book an appointment or to get advice, are limited<sup>11</sup>. The possibilities for using telemedicine to enable one to treat oneself in the home are variable. Self-help groups are now to be found on the internet, and these groups can be an important resource, for example for people with chronic complaints or disabilities.

### Several trends strengthen the need for electronic cooperation

In the following sections, three priority areas for expanded electronic interaction are specified, and the reasons for the choice are given. The three areas are:

1. involvement of patients, clients and relatives
2. electronic prescriptions to pharmacies, and support for prescribing
3. electronic interaction between municipal health and social services, and specialist health services.

New areas for cooperation may be given priority during the course of the planning period, on the basis of the results and recommendations of the work with establishing a national information structure.

#### 4.1 Involvement of patients, clients and relatives

Many episodes of patient care today begin

Several trends strengthen the need for electronic cooperation between service providers and patients, clients and relatives:

- People are more concerned about, better informed about, and partly more worried about, their own health.
- More patients expect to be given adequate information before, during and after treatment. They expect to be able to choose between different types of treatment, and they expect services to be easily available. This is related, among other things, to the increased importance given to patient rights in health policy and health legislation, and to a stronger consumer focus in relation to public services in general. A stronger focus on users is a central issue in the Government's work for a new welfare administration (12). This means, among other factors, that the individual user, to a larger degree, shall be able to choose between alternative services, and to choose where the service shall be provided – in a nursing home, in

<sup>11</sup> For example through the projects "High Quality Service to the Public" (24) and "Patient Link" (25)

<sup>12</sup> For example, a study from 2001 (26) showed that 45 % of respondents wished to have email contact with their doctor, and 33 % had used the internet for health matters. The need for health information via the internet will vary according to life situation (27). Healthy people generally require information about prevention, such as health tips and advice about lifestyle. People who have recently been diagnosed with an illness require information about the illness and advice from people with experience of the same illness. People with chronic diseases may wish to have information about treatment, medication, diet and other issues, and they often share their experiences with other people with chronic diseases, via the internet.

<sup>13</sup> According to the principle of universal design, information over the internet shall meet the standard requirements of the Web Accessibility Initiative (WAI) ([www.w3.org/WAI/](http://www.w3.org/WAI/)), so that it can be used by as many user groups as possible.

<sup>14</sup> The EU has developed quality criteria for web sites (28)

# Issuing prescriptions and dispensing medication in pharmacies is an important part of the continuity of patient care

sheltered accommodation or in ones own home.

- More and more patients and relatives wish to participate in decision-making, and are able to participate to a larger degree in their own treatment. Recent health legislation, such as the Specialized Health Services Act and the Patients' Rights Act, highlight health institutions' duty to give information and training to patients.
- Many people regard the internet as an obvious and essential channel for both information and services. This applies particularly to the health sector<sup>12</sup>.

## Strategy

1. *Web site with information about health and social issues.* Patients, clients and relatives shall be offered high quality comprehensive information on health and social issues. A web site shall be established with information about, for example, patients' rights, health and social issues and the services that are offered. The service shall be coordinated with the development of professional support and sources of information for the services, according to the priority area 3.6. User-friendliness and availability<sup>13</sup> for different target groups shall be ensured in development of the web site, and the web site shall be supplemented with a telephone information service. The initiative will develop further the service that is currently provided on the web site [www.sykehusvalg.no](http://www.sykehusvalg.no), where patients can get information about waiting lists and quality indicators for different health enterprises.
2. *Electronic interaction between patients and health care personnel:* In the areas of the continuity of patient care where it is appropriate and professionally

acceptable, electronic dialogue and follow-up shall be offered (from booking an appointment and repeat prescriptions to advice and guidance). Further work in this area will involve research, testing and further use of applications.

3. *Self-treatment in the home.* Testing and further use of telemedicine shall continue to be given priority, to make it possible for patients and people who need nursing and care services to monitor their own health status, and to administer their own medication and treatment at home.
4. *Requirements for quality, acceptable professional standards and security* shall be specified for suppliers of health-related web sites. For example, guidelines on quality and acceptable professional standards shall be developed for health information and health services on the web, based on health legislation and international criteria<sup>14</sup>.
5. *Forum – patients and electronic interaction.* A forum for cooperation between, for example, patient organizations, the authorities, research and development organizations and suppliers of services shall be established, in order to give priority to and prepare the conditions for high quality services, as far as possible.

## 4.2 Electronic prescriptions to pharmacies and support for prescribing

Issuing prescriptions and dispensing medication in pharmacies is an important part of the continuity of patient care. Issuing prescriptions takes up a large part of a physician's day. Today, these tasks are carried out using a mixture of paper-based and electronic systems, and flow of

information is affected by this. With seventeen million prescriptions issued every year by Norwegian pharmacies, the effect of improved applications can be significant, also from an economic aspect.

Electronic prescriptions (e-prescriptions) and electronic support for prescribing will be beneficial for several groups. Pharmacies will be able to issue prescriptions more speedily and with fewer mistakes. The National Insurance Administration will be able to practice its control function more easily. Physicians will spend less time on issuing prescriptions and the quality of the service will be improved through support for prescribing. Patients will be able to get their prescription at any pharmacy. In addition, the authorities will be able to inform physicians speedily about changes in regulations and criteria for reimbursement of prescription charges.

## Strategy

The strategy for implementing an electronic prescription system includes both short-term and long-term measures:

1. *E-prescriptions:* The implementation of standardized message of electronic prescriptions is already underway in the sector.
2. *The next generation of e-prescriptions* shall be developed and taken into use in such a way as to meet the needs for control and administration of the "blue prescription" system, and the conditions for reimbursements. This includes applications that safeguard patients' right to free choice of pharmacy, making information on "blue prescriptions" available for the National Insurance Administration (for reimbursements and control) and the



possibility for pharmacies to check the identity of prescribers (certificate) with authorization in the health care personnel register.

3. *Rational use of medicinal products:* The development and use of e-prescriptions shall be combined with measures for promoting the rational use of medicinal products and quality in prescribing. This involves, for example, ensuring that the prescriber has access to recommendations for rational use of medicinal products, including information about effective life-style interventions (green prescription), reports about drugs and adverse reactions, prices, conditions for reimbursement, and lists of alternative drugs in his or her patient record system when issuing electronic prescriptions.

municipalities today take more responsibility for people who need more complex and specialized health services. The municipalities are involved in active treatment and rehabilitation at an earlier stage in the continuity of patient care. The municipalities are given direct responsibility for follow-up, they are involved in post-operative treatment, they have responsibility for administering medication, rehabilitation, pain-relief and care.

With the reform of health and social services for people with substance abuse problems, which came into force on 01.01.04, the need for interaction between social services, regular medical practitioners and health enterprises is even

As a result of the developments, the requirements in terms of effective use of resources, and improved flow of information, are greater

#### 4.3 Electronic interaction between municipal health and social services, and specialist health services

Extrapolation of the population for the next few years show that both the number and the proportion of elderly people in the population will increase (29). At the same time the number of people under the age of 67 with complex and extensive need for care (11), for example people with profound disabilities and people with chronic illness, will increase. These developments will probably lead to increased need for health and social services in the coming years.

At the same time, it appears that many

more important. Social services are central actors the continuity of patient care in the treatment and follow-up of people with substance abuse problems. Specialist health services have a duty to inform social services well in advance when patients who require follow-up in the municipality are discharged from hospital.

As a result of the developments, the requirements in terms of effective use of health and social service resources, and improved flow of information between municipal health and social services and specialist health services, are greater. The following example illustrates that the present flow of information is unsatisfactory. Nurses in home nursing services and nursing homes often do not

15 IPLOS stands for Individual-based Nursing and Care Statistics (Individbasert Pleie- og OmsorgsStatistikk). This is a compulsory national information system for nursing and care services. The system shall aid administrative procedures and documentation of the services. In addition it will provide statistics for planning and decision-making in the municipalities and for the government authorities.



# Comprehensive efforts within national priority areas must be made for coordinated development of electronic interaction with and within municipal health and social services

have access to essential information from other service providers about their patients. It has also been shown that there can be poor accordance between the drug chart in the patient record kept by the general medical practitioner, the specialist health service and the home nursing service (30).

ICT investments and electronic interaction can meet the challenges posed by flow of information and use of resources that have been outlined. The municipalities have responsibility for exploiting the possibilities provided by technology, in accordance with the principle of municipal freedom of choice and responsibility. Many municipalities have invested in electronic documentation systems and are preparing for electronic registration in IPLOS<sup>15</sup> and electronic interaction with other actors. At the same time, other municipalities have not yet managed to give priority to electronic interaction. Thus the differences between the municipalities, both in relation to implementation of new ICT applications, and in relation to the consequent effects on service provision, are becoming greater.

As long as each individual municipality independently assesses the choice of ICT applications for its own health and social services, and the time-plan for implementation, there is a danger that the same situation will develop in the municipalities that has developed in the hospital sector. The situation in the hospital sector is the result of inadequate coordination of priority areas. A series of different applications are to be found in the hospital sector, and this makes interaction on the national level and

between treatment levels more complicated.

Comprehensive efforts within national priority areas must be made for coordinated development of electronic interaction with and within municipal health and social services. This focus will give municipalities a common information base and help to ensure that applications that are introduced communicate well with each other and with applications used by central cooperating partners, such as health enterprises and general practitioner s.

## Strategy

*Municipal programme:* A municipal programme for electronic interaction shall lead to closer and improved cooperation between primary health services, specialist health services and social services. The programme shall be based on the contract between the Norwegian Government and the Norwegian Association of Local and Regional Authorities on quality improvement in nursing and care services (31). The programme will have three main objectives:

1. Municipal health and social services shall be linked to appropriate and sound infrastructure, that makes it possible to cooperate with other sections of the health service.
2. The applications that are needed most for interaction shall be developed and implemented. For example:
  - sharing updated information on use of medicinal products
  - cooperation on individual plans
  - early notification of patient discharges from specialist health services to municipal health and social services

- common professional support and sources of information in order to reduce the information gap between those with specialized competence and municipal services

3. Development of electronic applications for nursing and care services shall be coordinated. As part of this, national standards shall be implemented or established.

Both the establishment and the implementation of the programme will take place in close cooperation with the Ministry of Social Affairs and representatives from the municipalities.

Work will be done to establish five *municipal best practice projects*. By highlighting different possibilities and by documenting the benefits to be achieved, they can act as a stimulus to others. The *best practice projects* shall be projects of national innovative character, that have transfer value for other municipalities, and that involve testing out specific measures for electronic interaction. The *best practice projects* shall identify needs, potential gains and possible applications for electronic interaction within municipal health and social services, and between social services and specialist health services. *Experience dissemination* will be a central element of the programme, with a view to achieving a common and well-known information base for electronic interaction in the health and social services.

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